

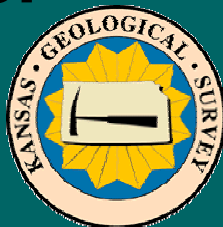


# Where Does Kansas Gas Come From and Where Does Kansas Gas Go?

**Tim Carr**

**Kansas Geological Survey**

**Kansas University Energy Research Center**





# Kansas Gas Overview

1873 First Commercial  
Gas Well Near Iola .

6,083 Oil and Gas Fields

2,273 Oil Operators and  
1,015 Gas Operators

14,804 Active Oil Leases  
16,056 Active Gas  
Leases

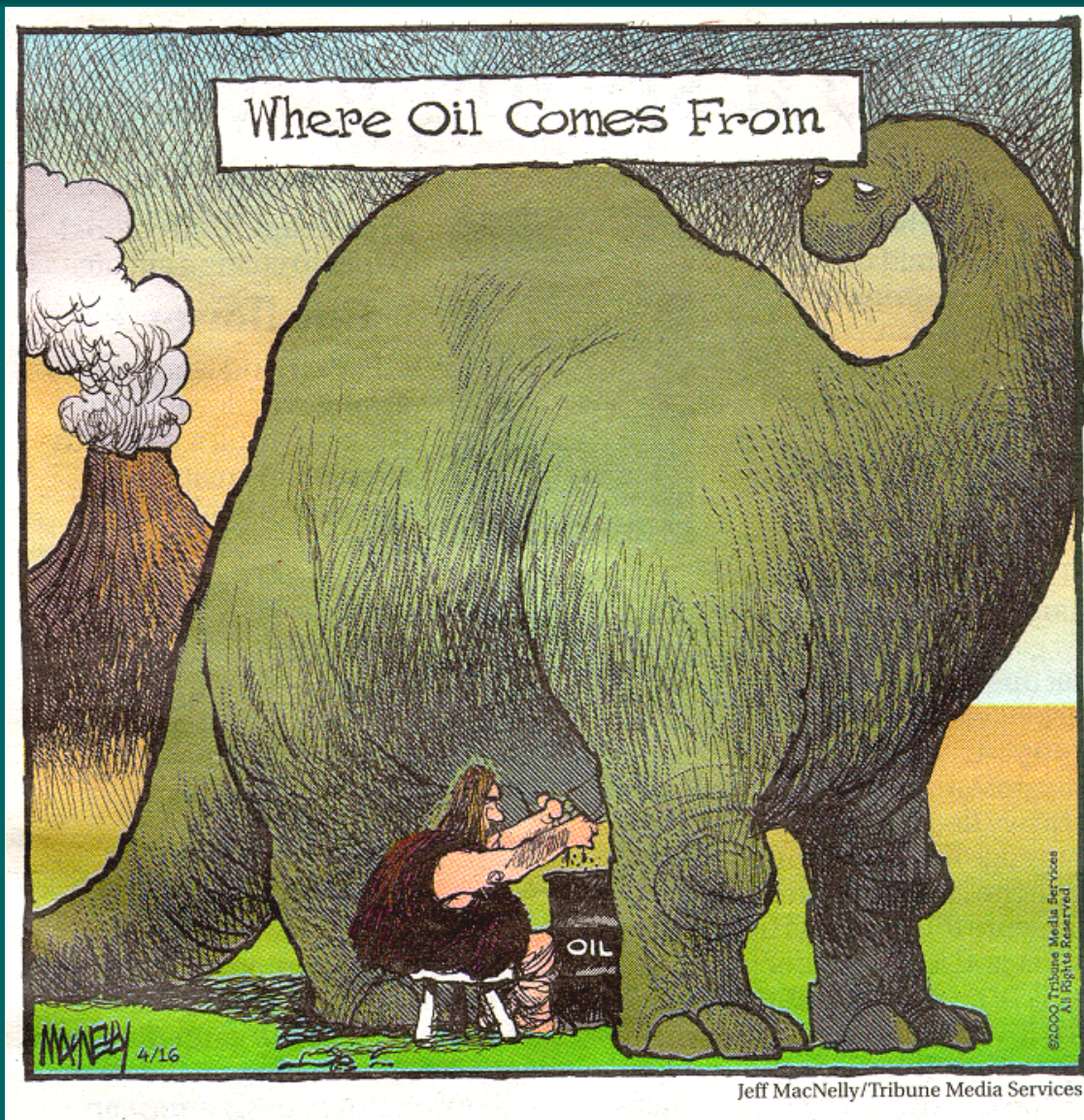
41,713 Active Oil Wells  
17,647 Active Gas Wells

- ★ Energy is Critical for Our Present and Future
- ★ Independent Producer Is Dominant
- ★ Resource Is Adequate
- ★ Price Will Balance Supply to Demand
- ★ Energy Policy Can Effect Production
- ★ Kansas Is Critical to US Gas Infrastructure
- ★ Future Kansas Gas Resources Exist
  - Require - Technology, Investment, Policy, & People**
- ★ Need for Technology and Education Investment





# Where Oil & Gas Comes From



October 21, 2003

Jeff MacNelly/Tribune Media Services



T. R. Carr



# Where Oil & Gas Comes From

*It is the genius of a people that determines how much oil is produced; the presence of oil in the earth is not enough. ....*

*oil must be sought first of all in our minds.*

*Wallace Pratt, 1934*



# Humanity's Top Ten Problems Next 50 Years

Richard Smalley, 2003 (1996 Noble Laureate in Chemistry)

1. **ENERGY**
2. WATER
3. FOOD
4. ENVIRONMENT
5. POVERTY
6. TERRORISM & WAR
7. DISEASE
8. EDUCATION
9. DEMOCRACY
10. POPULATION

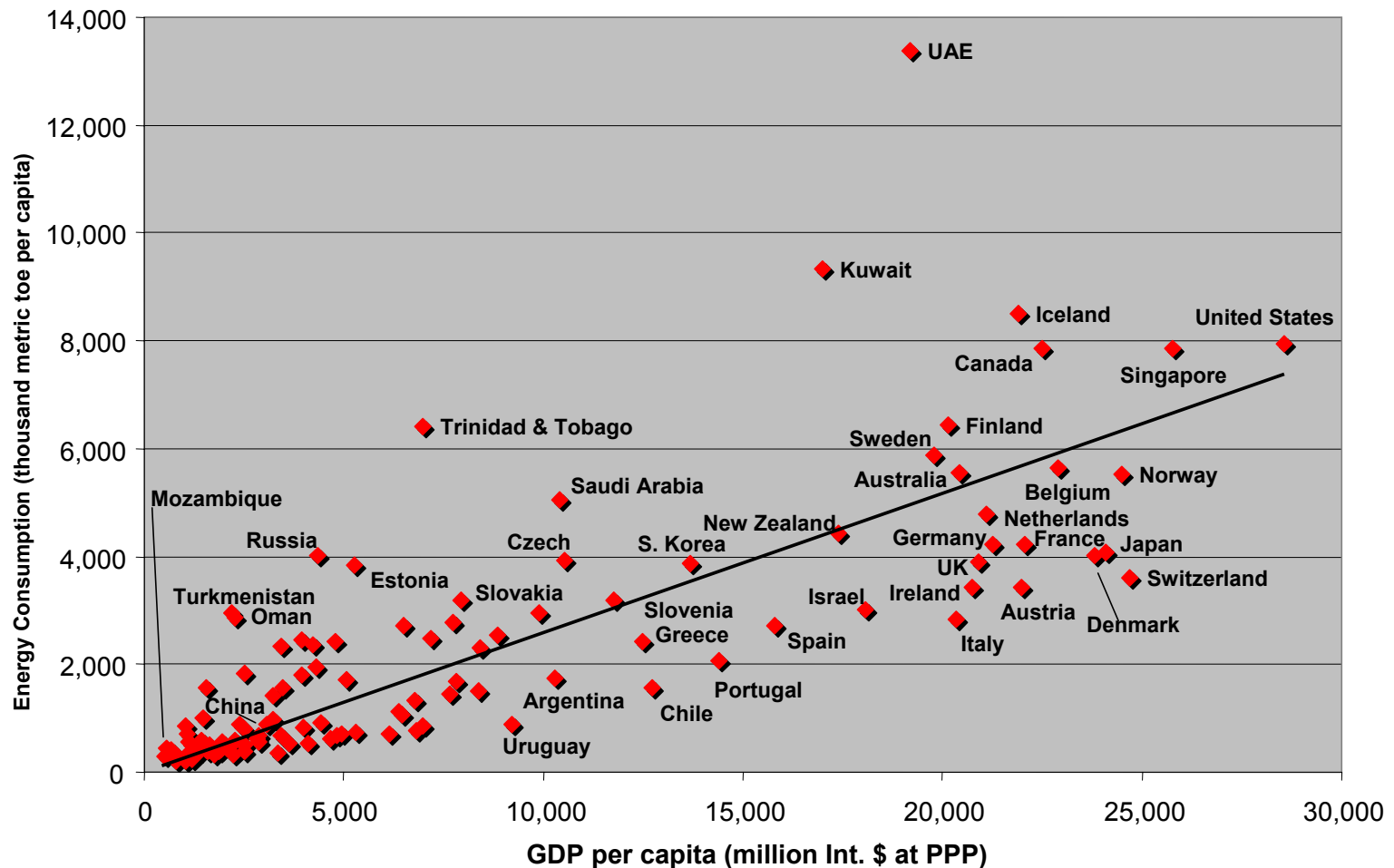


2003	6.3	Billion People
2050	8-10	Billion People



# World Energy

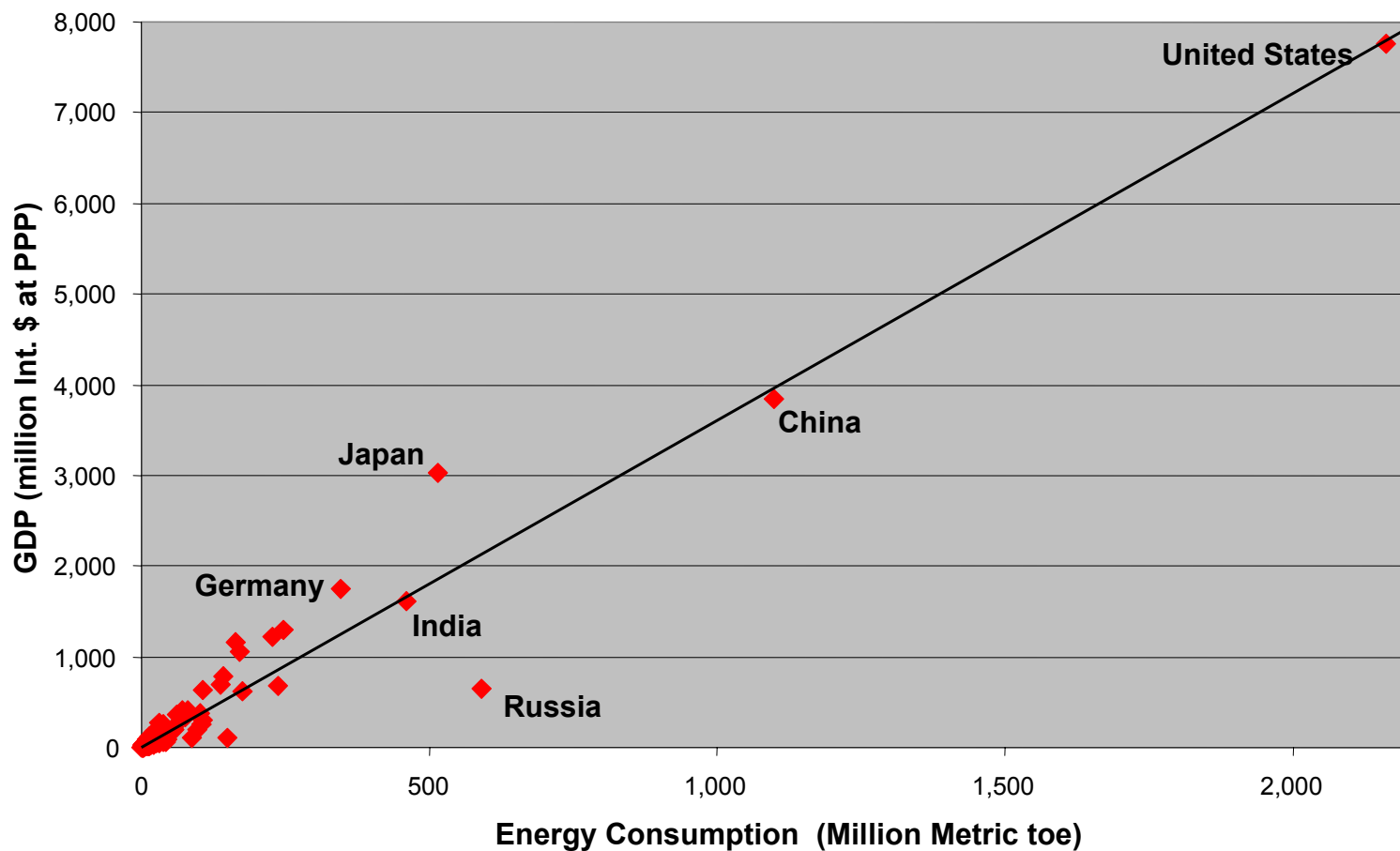
## GDP vs. Energy Consumption



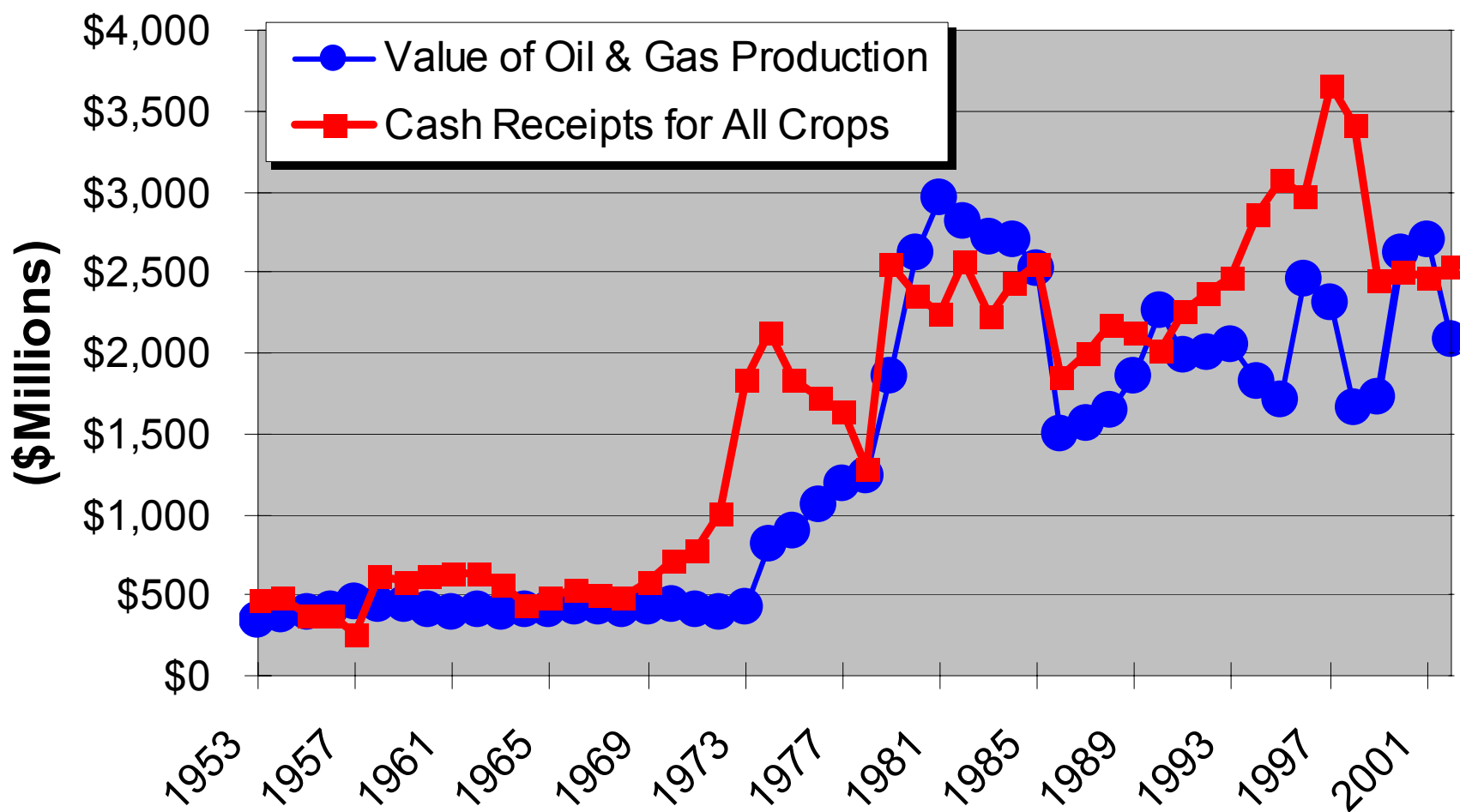


# World Energy

## Energy Consumption vs. GDP

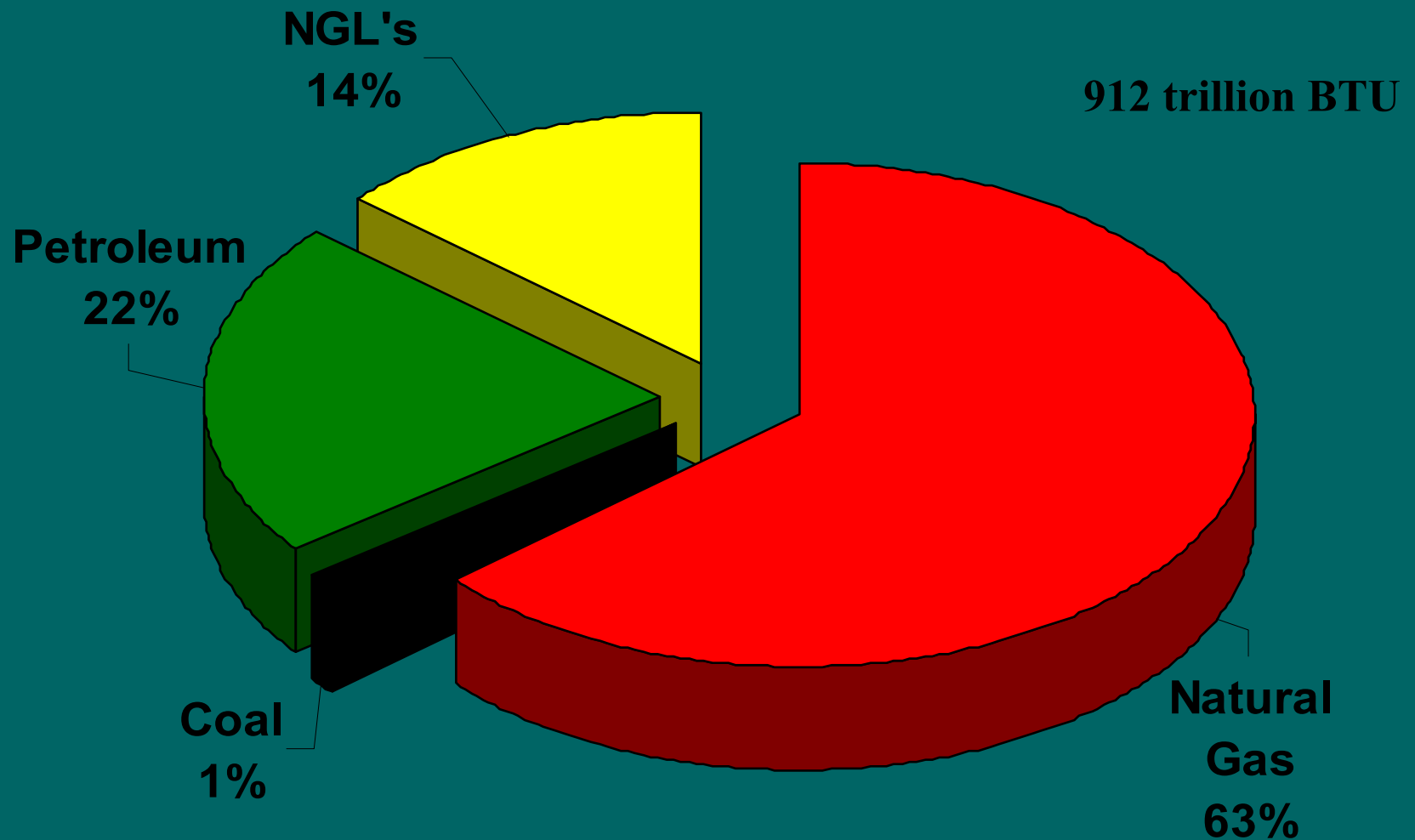


# Kansas Wellhead Value





# Kansas Energy Production



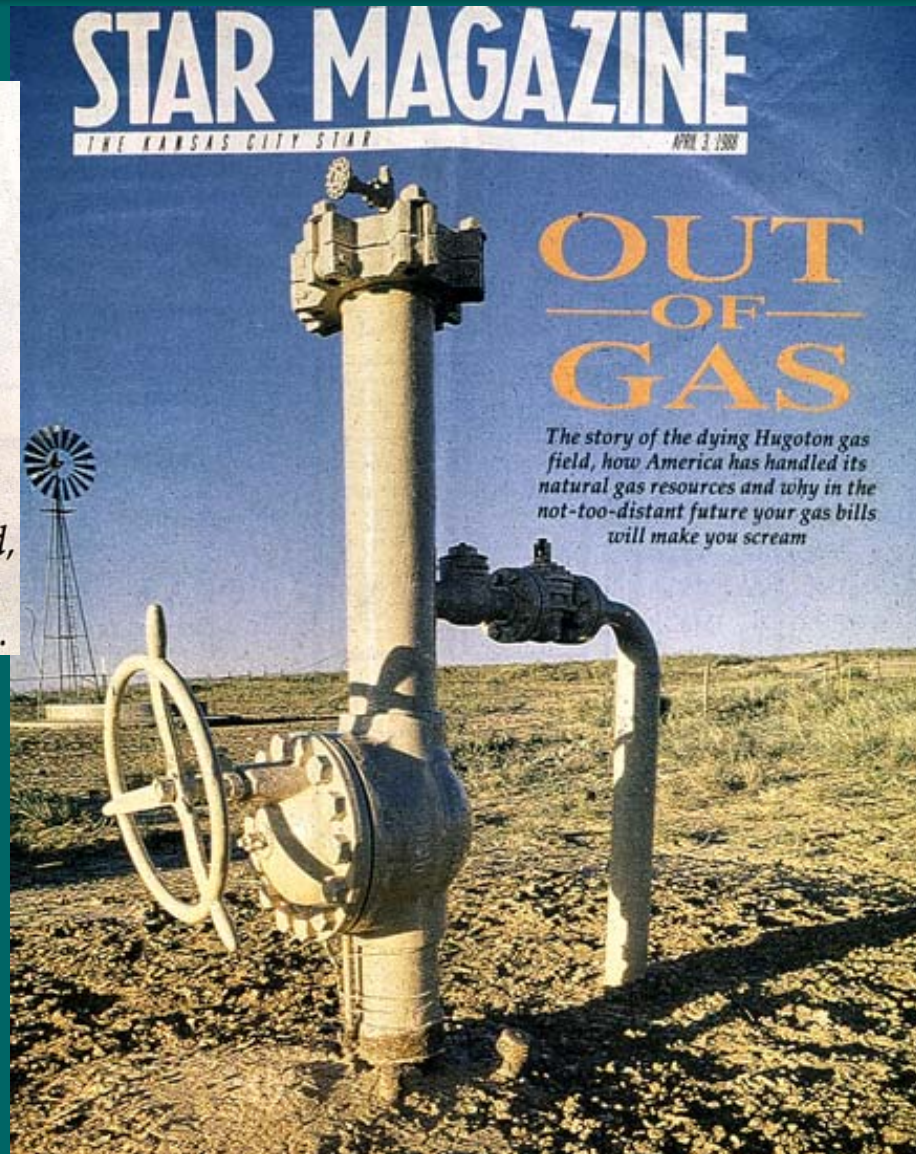
# Kansas Gas Production

## BYE-BYE, **BIG BUBBLE**

*After years of corporate cupidity, ludicrous government regulations and confused resource management, western Kansas' Hugoton Gas Field, the nation's largest, is finally going flat. When it does, things will get expensive. Guess who'll pay.*

**April 3, 1988**

October 21, 2003

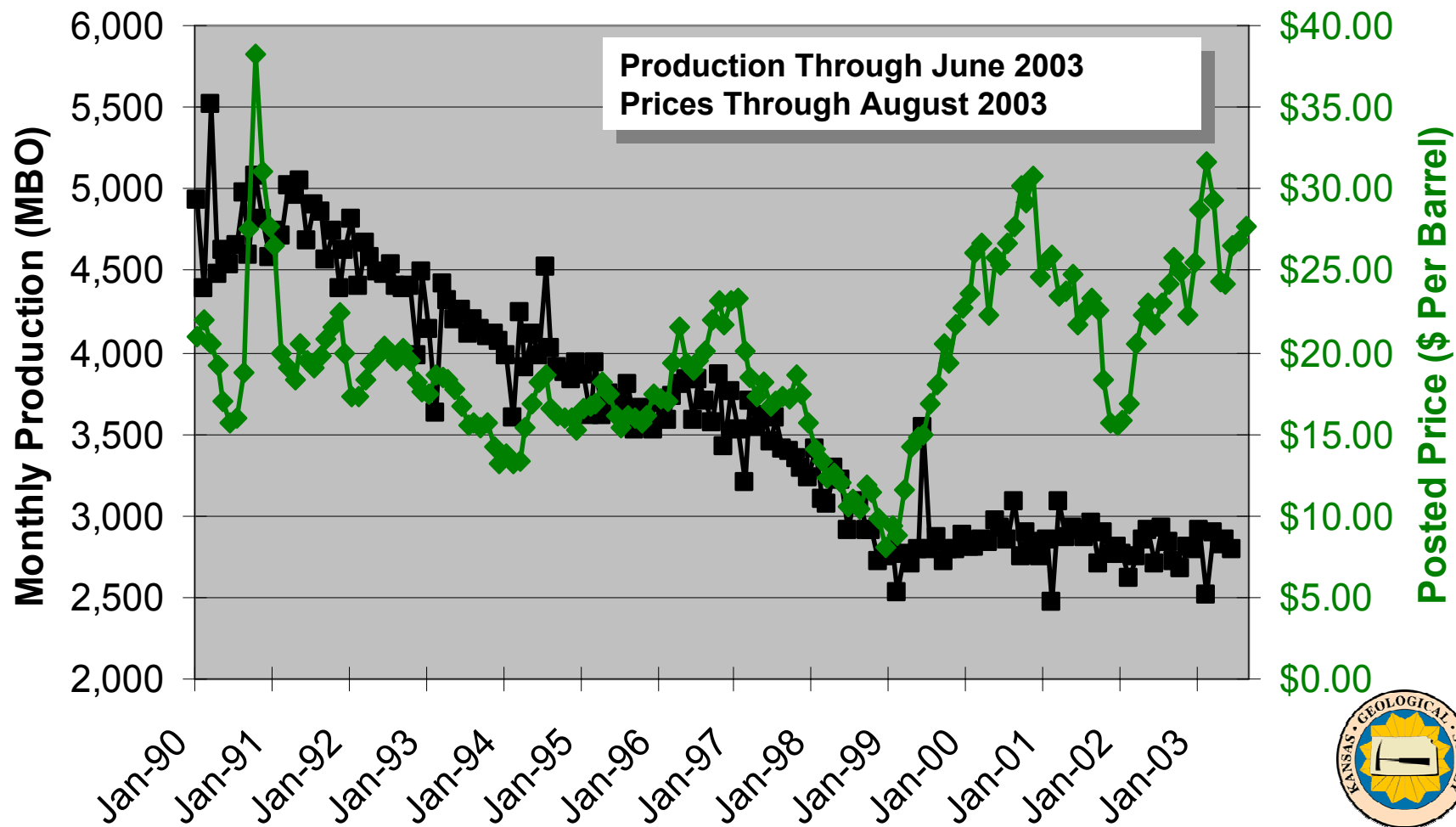


T. R. Carr



# Kansas Oil Production

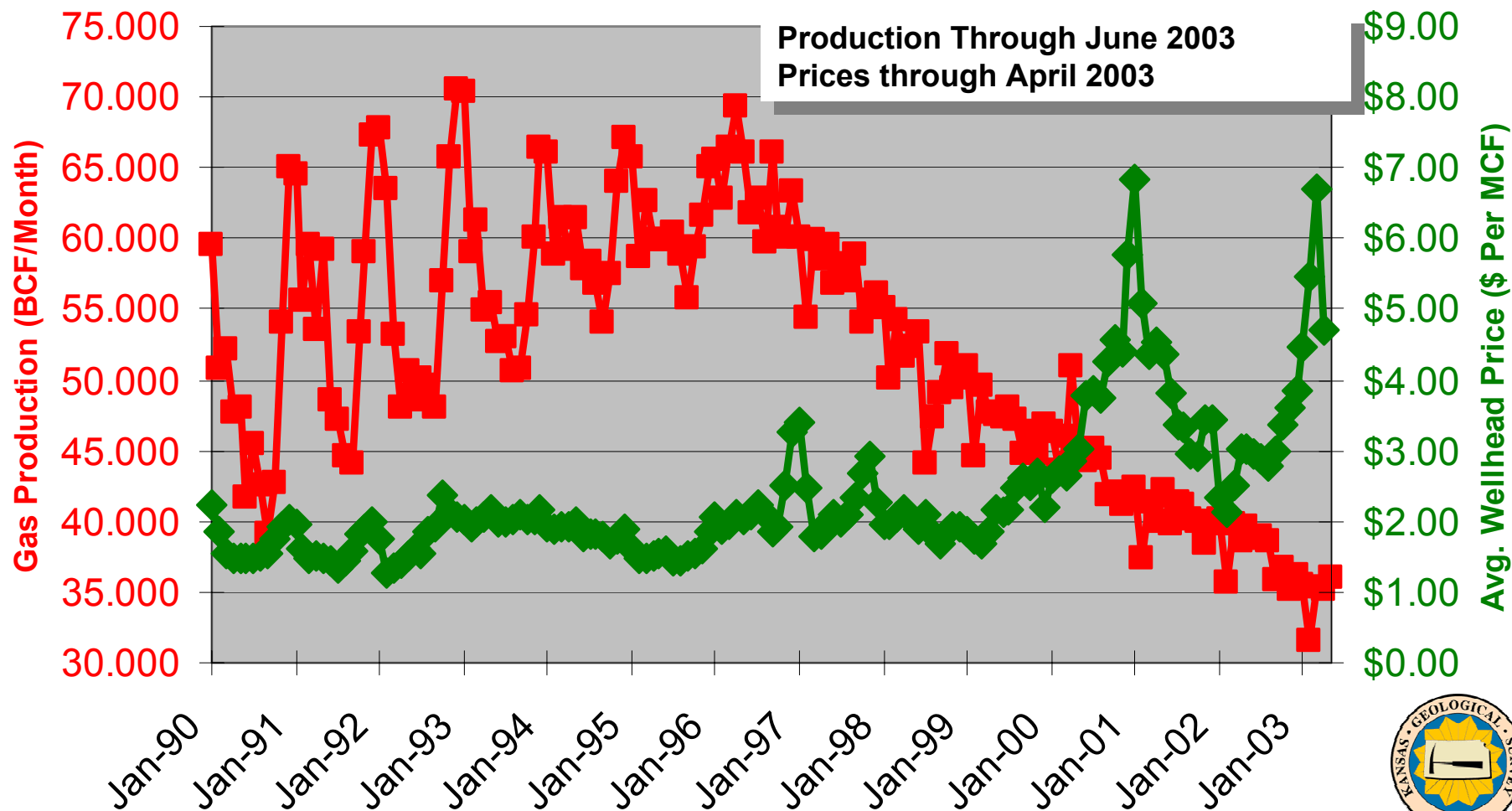
## Price Sensitive



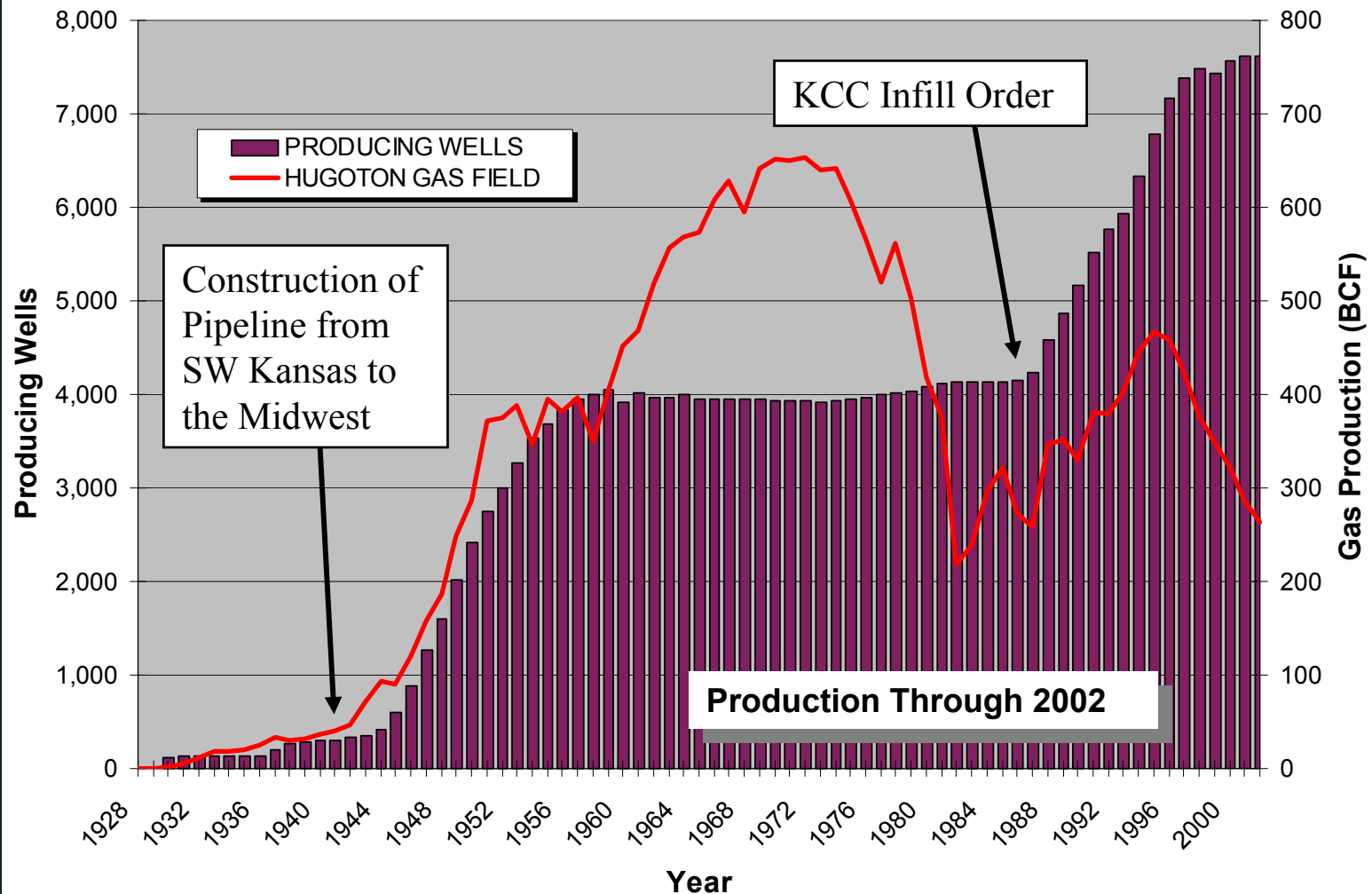


# Kansas Gas Production

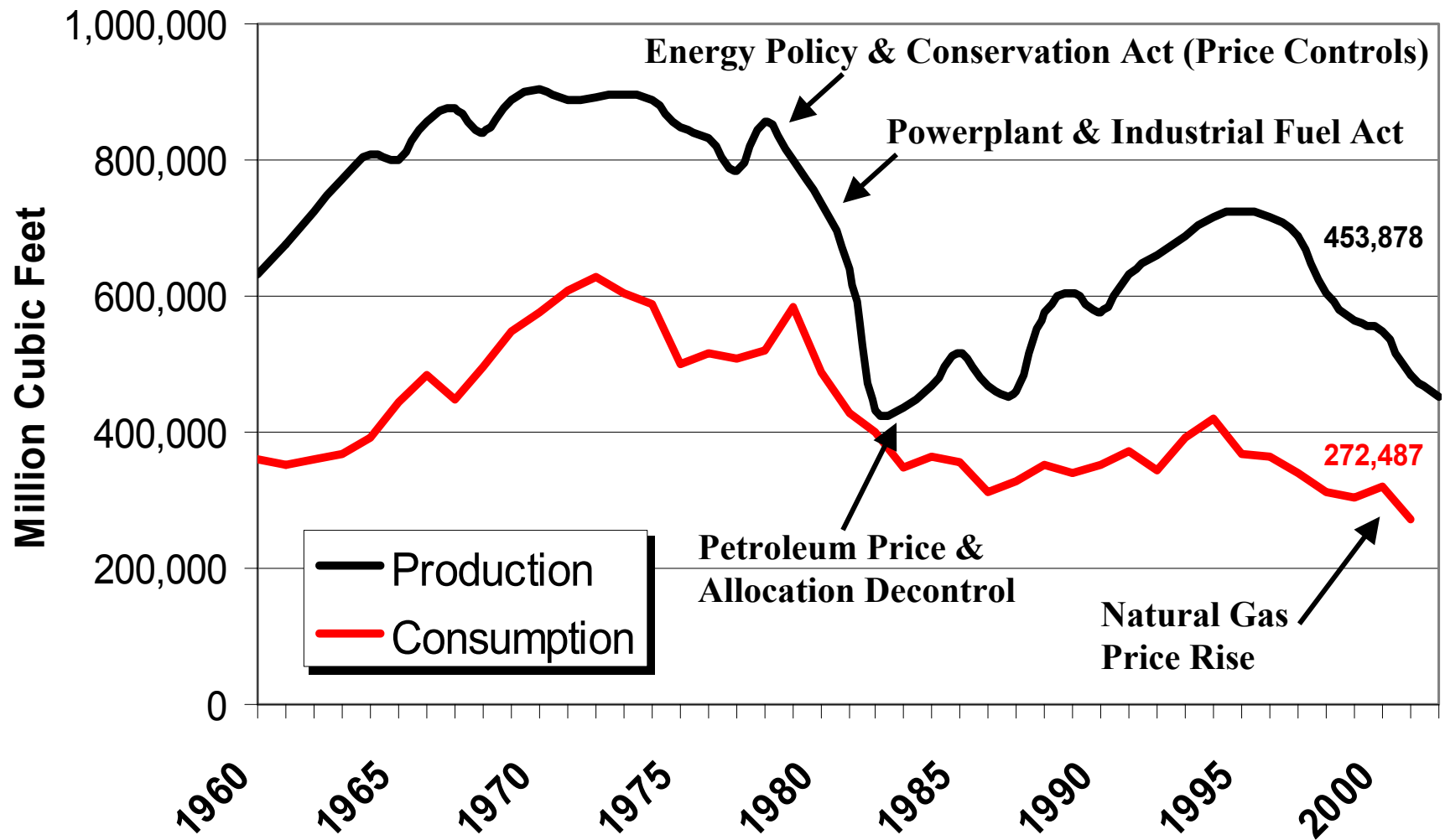
## Price Sensitive



# Hugoton Annual Gas Production Positive Policy Results

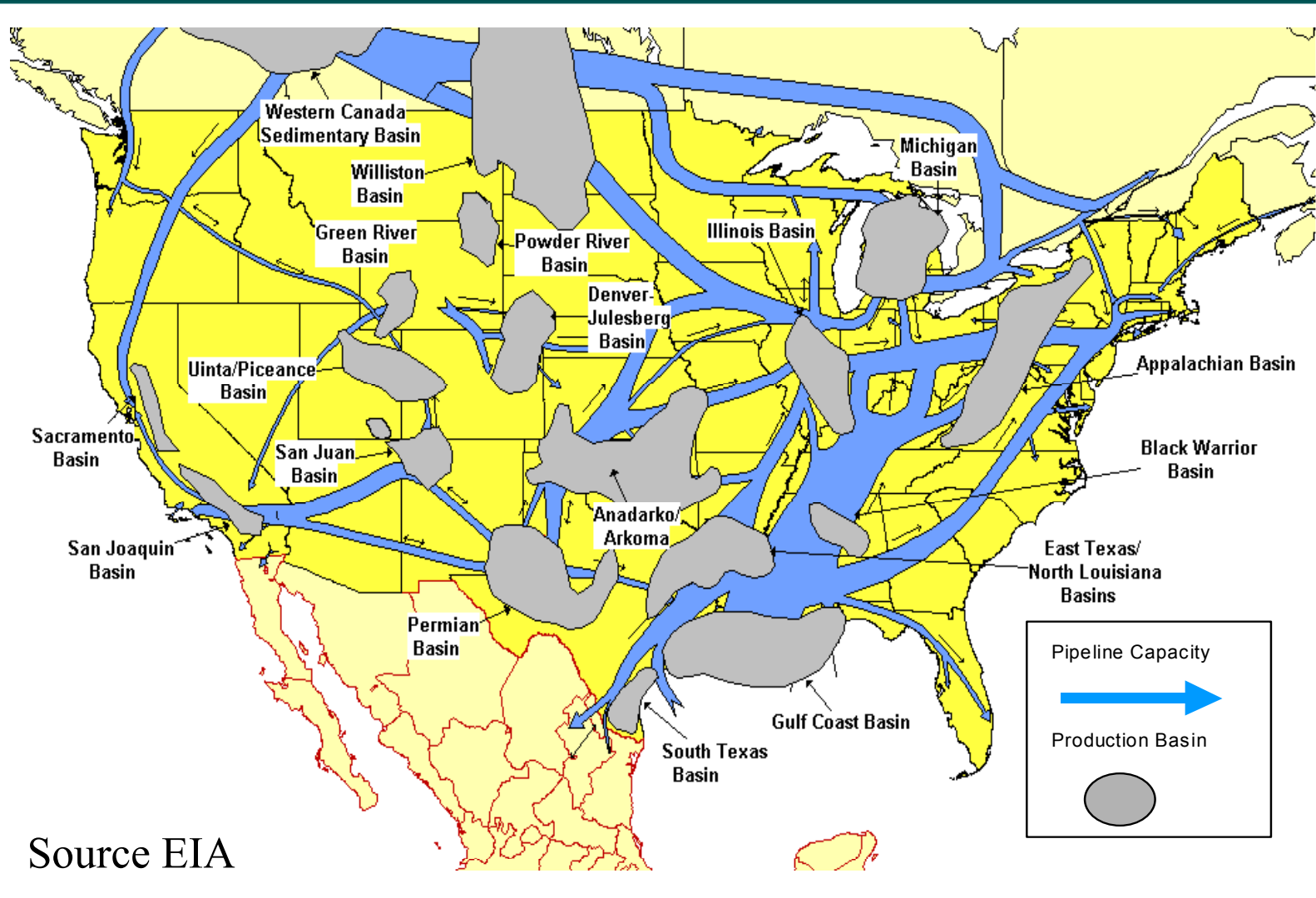


# Kansas Annual Gas Production Negative Policy Results

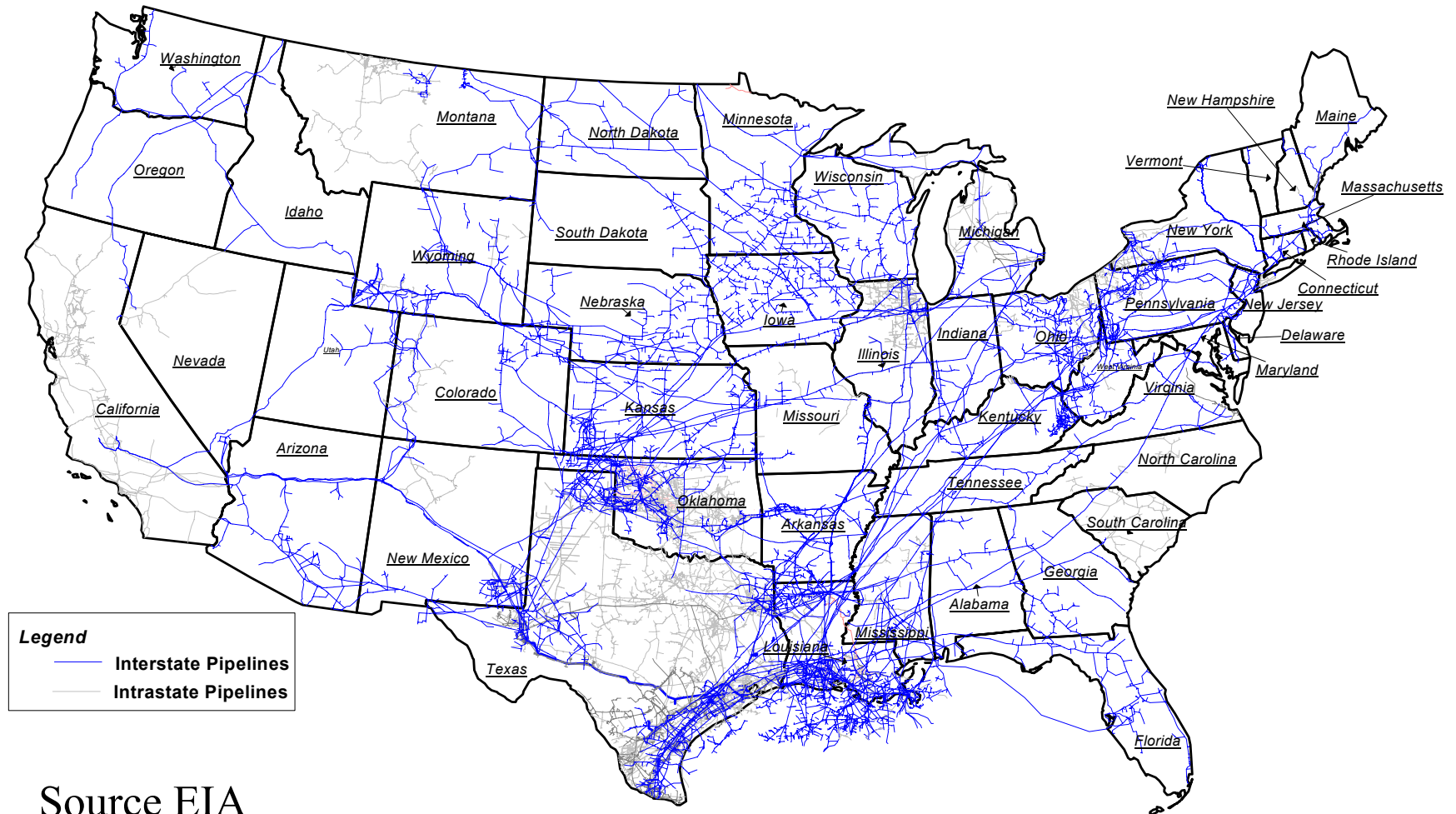




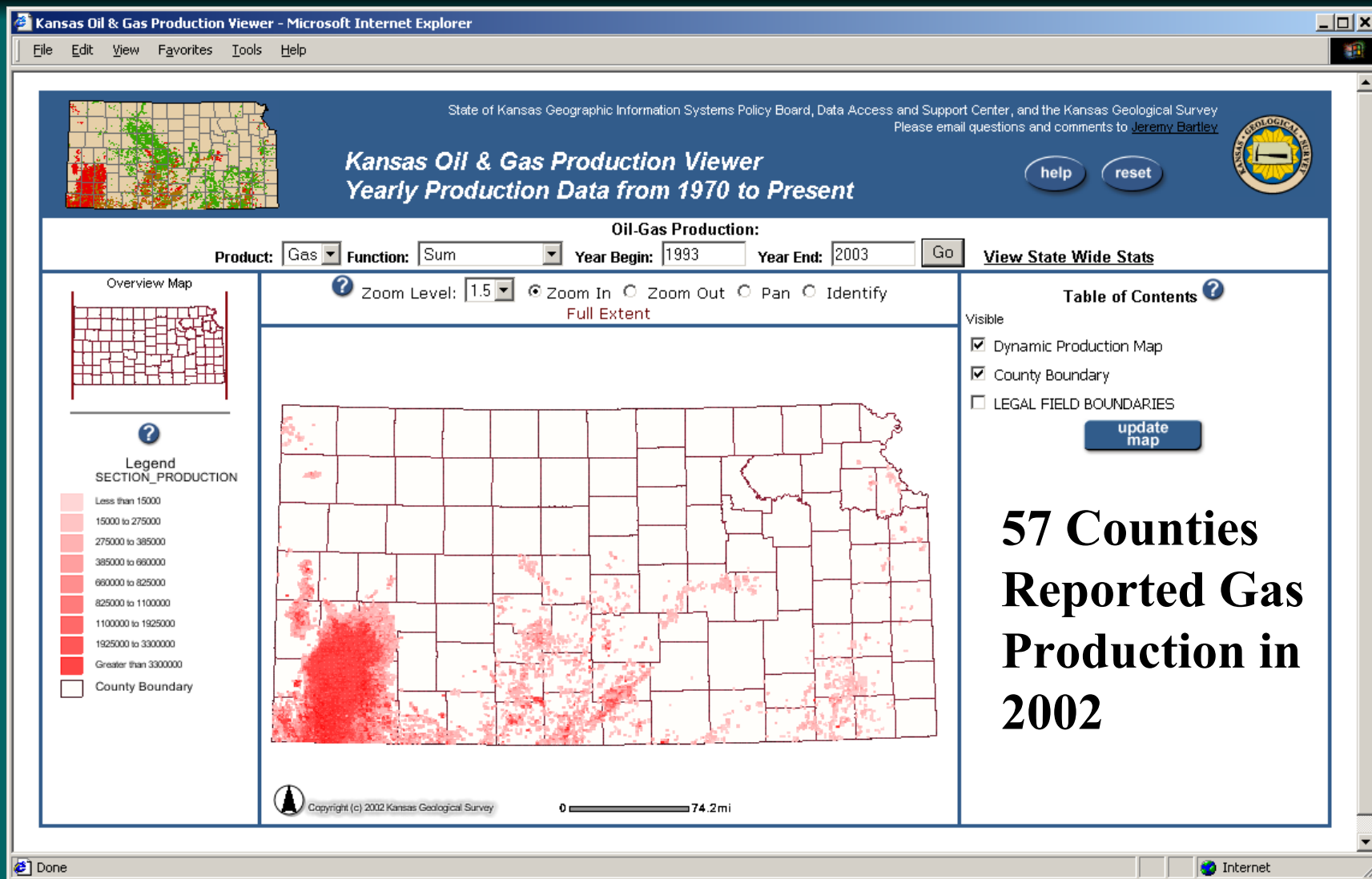
# Kansas Critical To Gas Infrastructure



# Kansas Critical To Gas Infrastructure

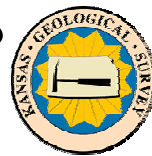
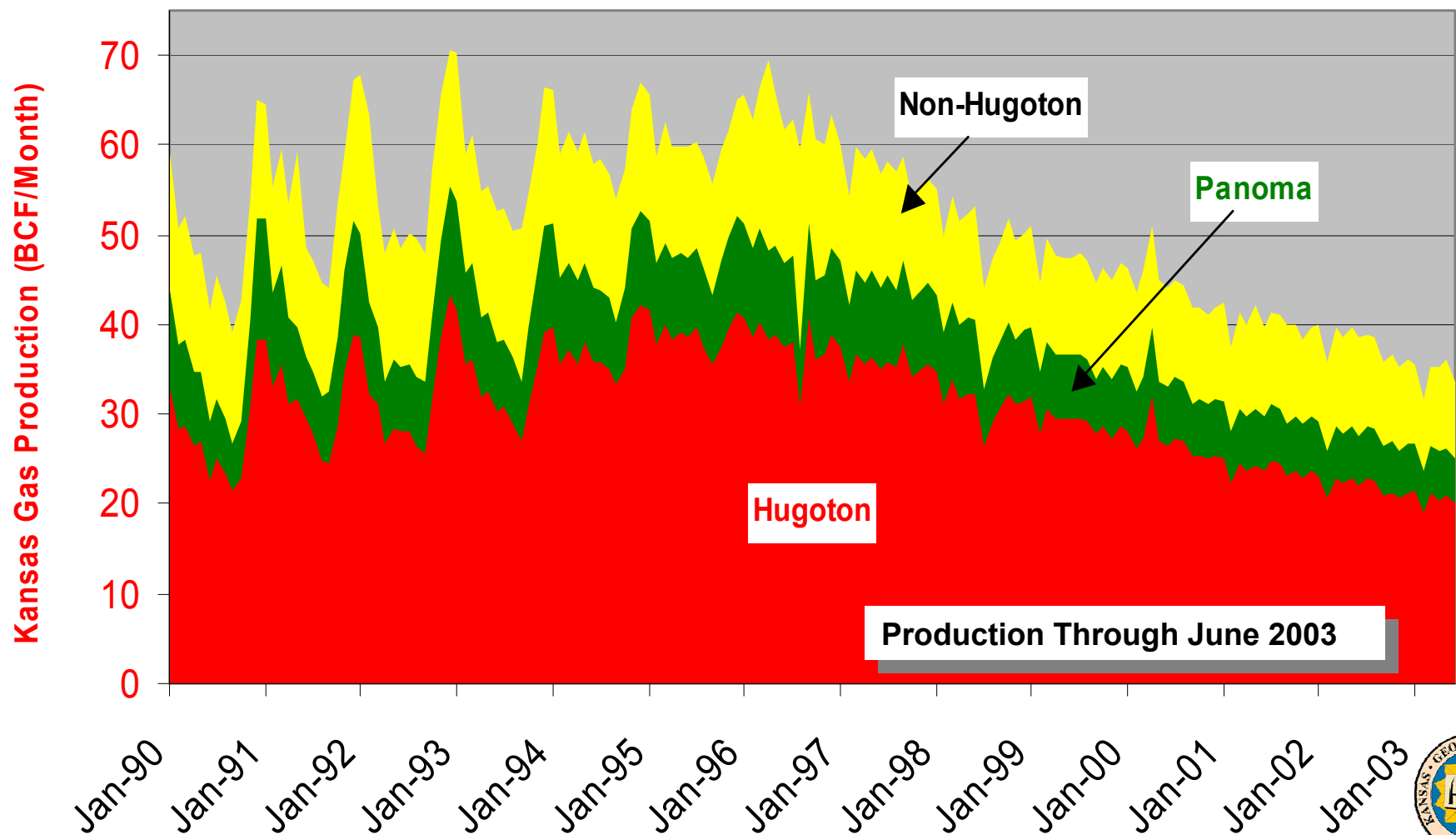


# Kansas Gas Production Widespread



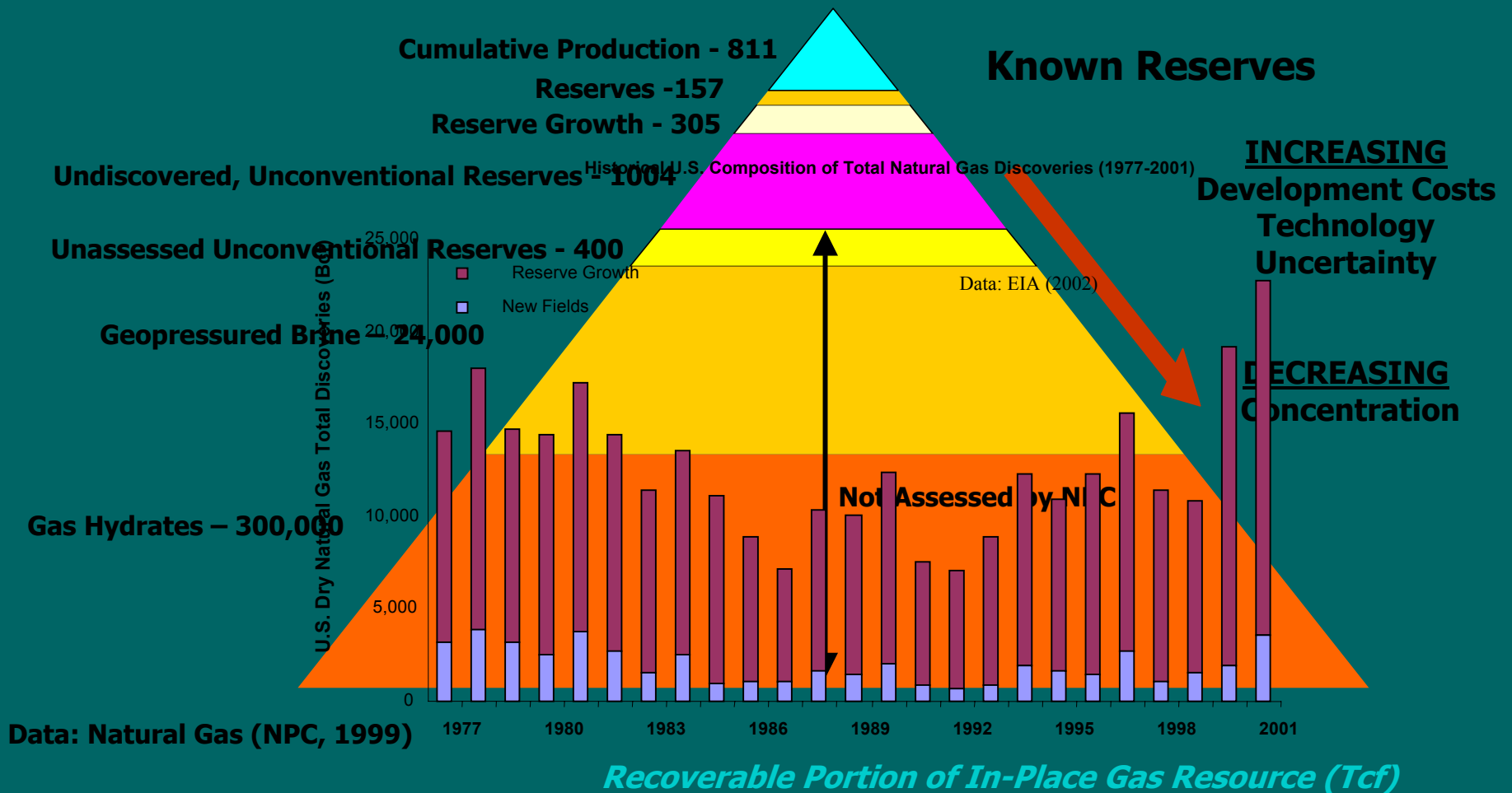


# SW Kansas Gas Production Dominates

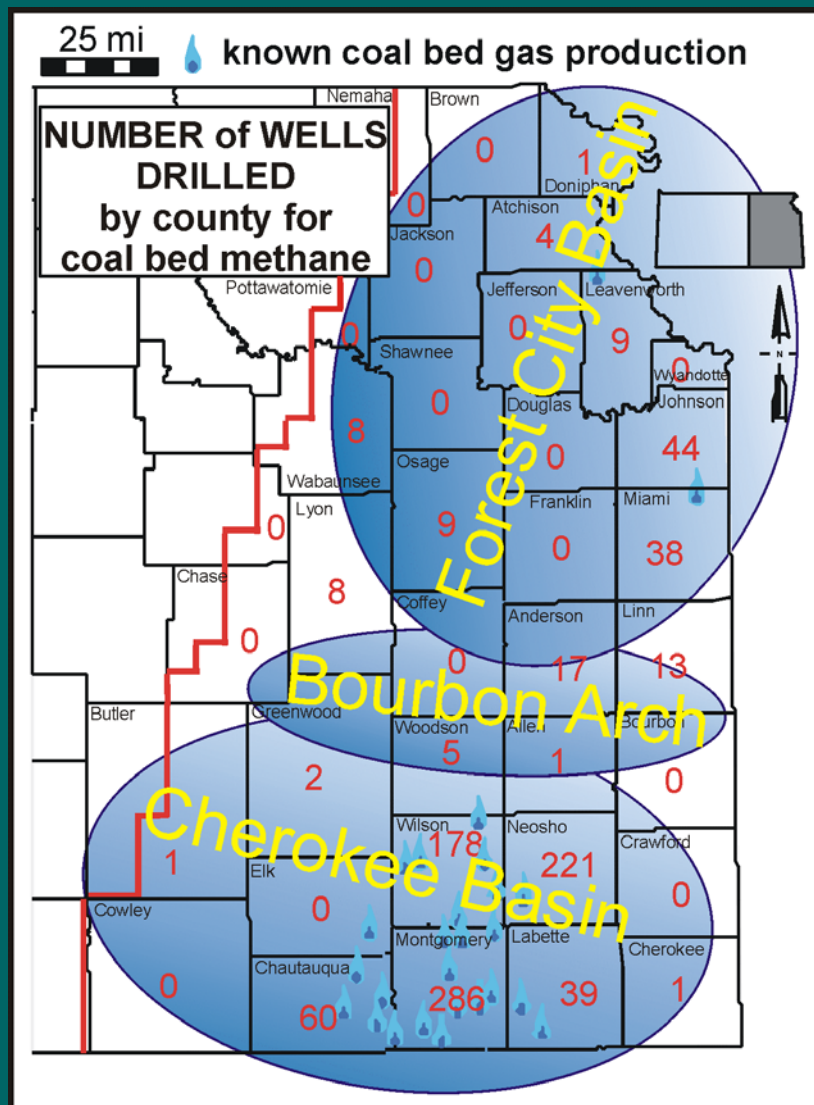




# Supply & Technology

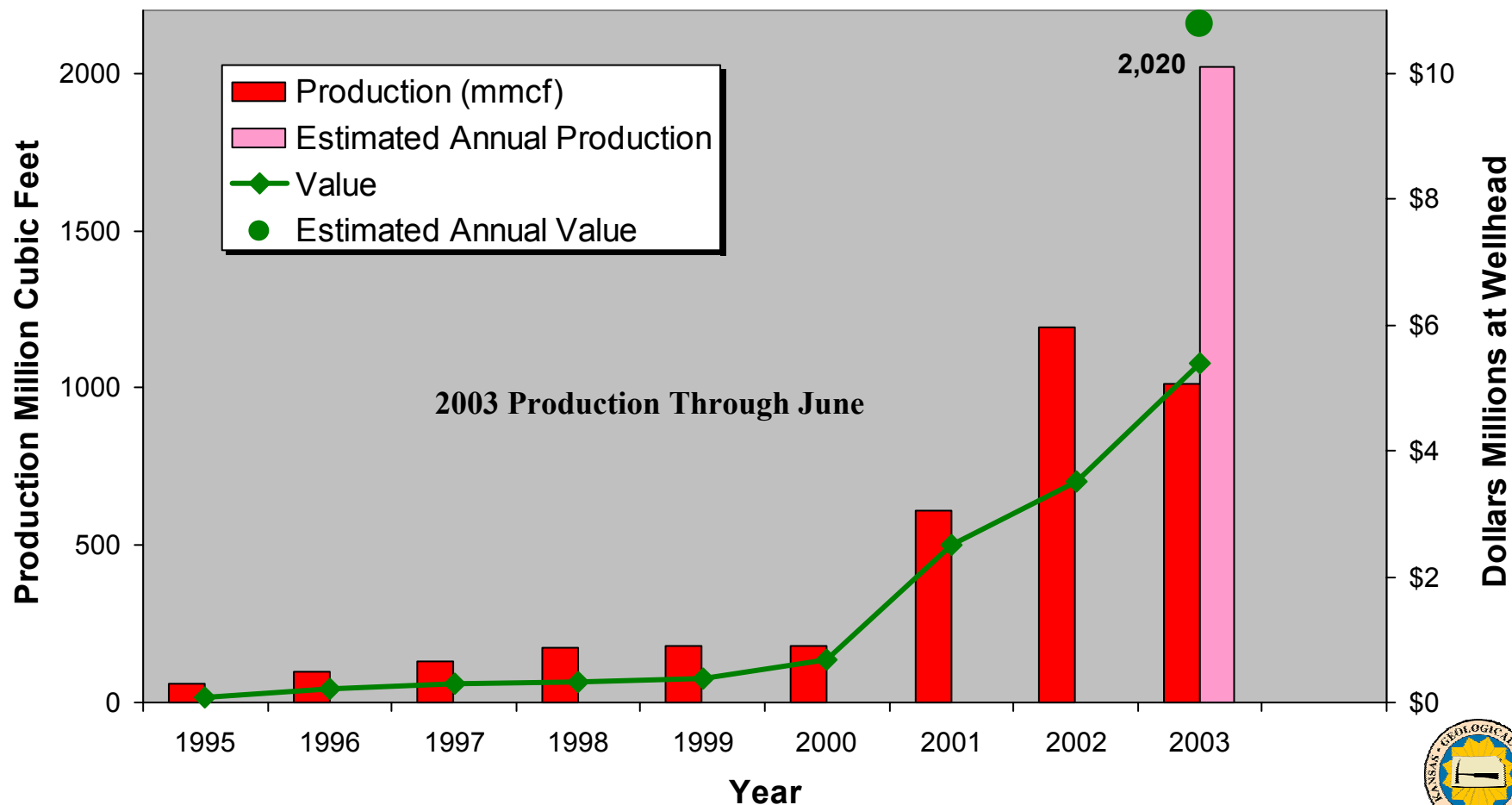


# Coalbed Methane Near-Term Potential

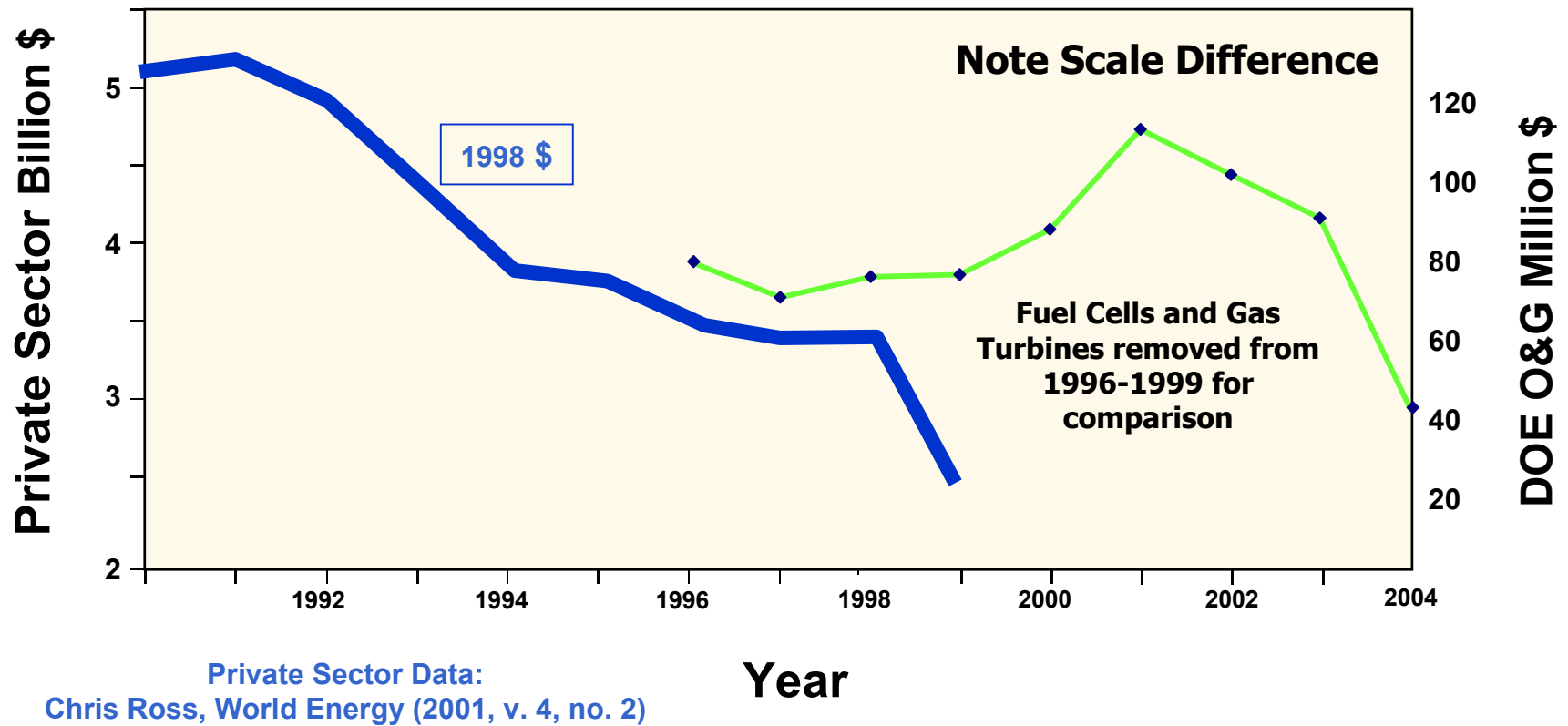




# Neosho County CBM Production



# Petroleum R&D Funding





# Kansas Gas Future

## ★ Reserve Growth

- Southwest Kansas

## ★ Unconventional Gas

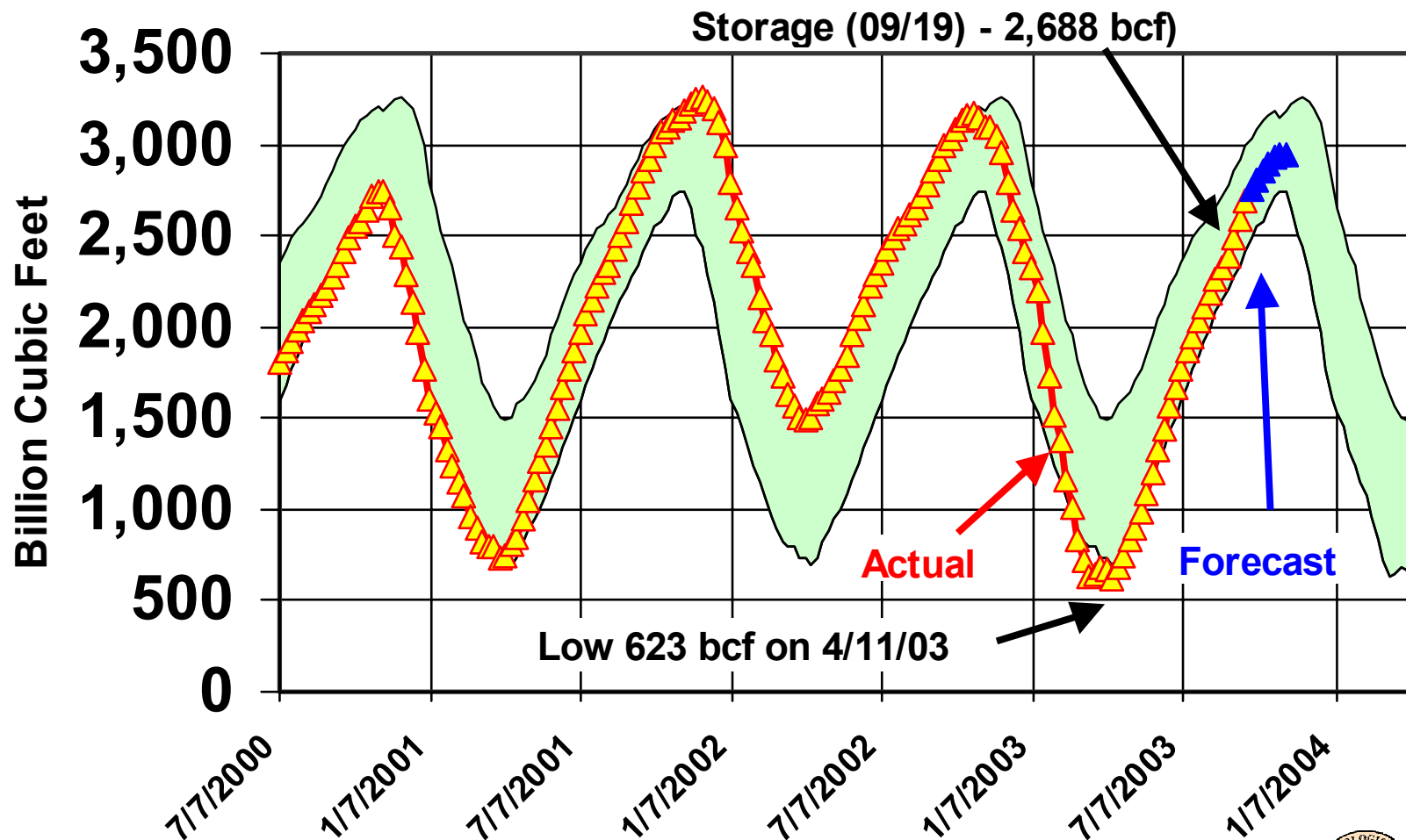
- Coalbed and Shale Gas – Eastern Kansas
- Low BTU Gas – Central Kansas
- Tight Low-Pressure Gas
  - Northwest Kansas – Niobrara
  - Southcentral Kansas - Viola, Chat

## ★ Linked Energy Systems

- Ethanol Production
- Landfill Gas



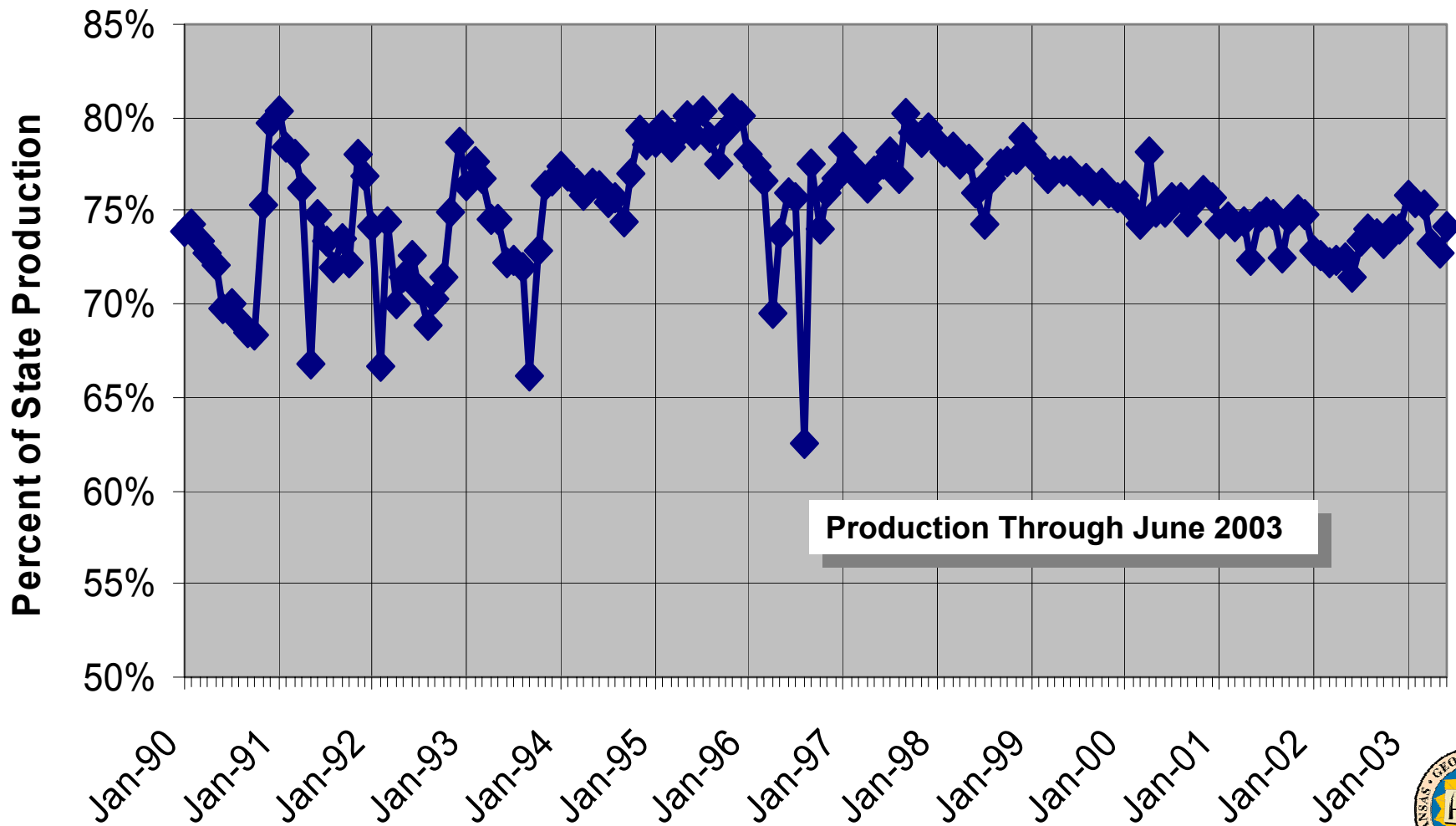
# Natural Gas Storage



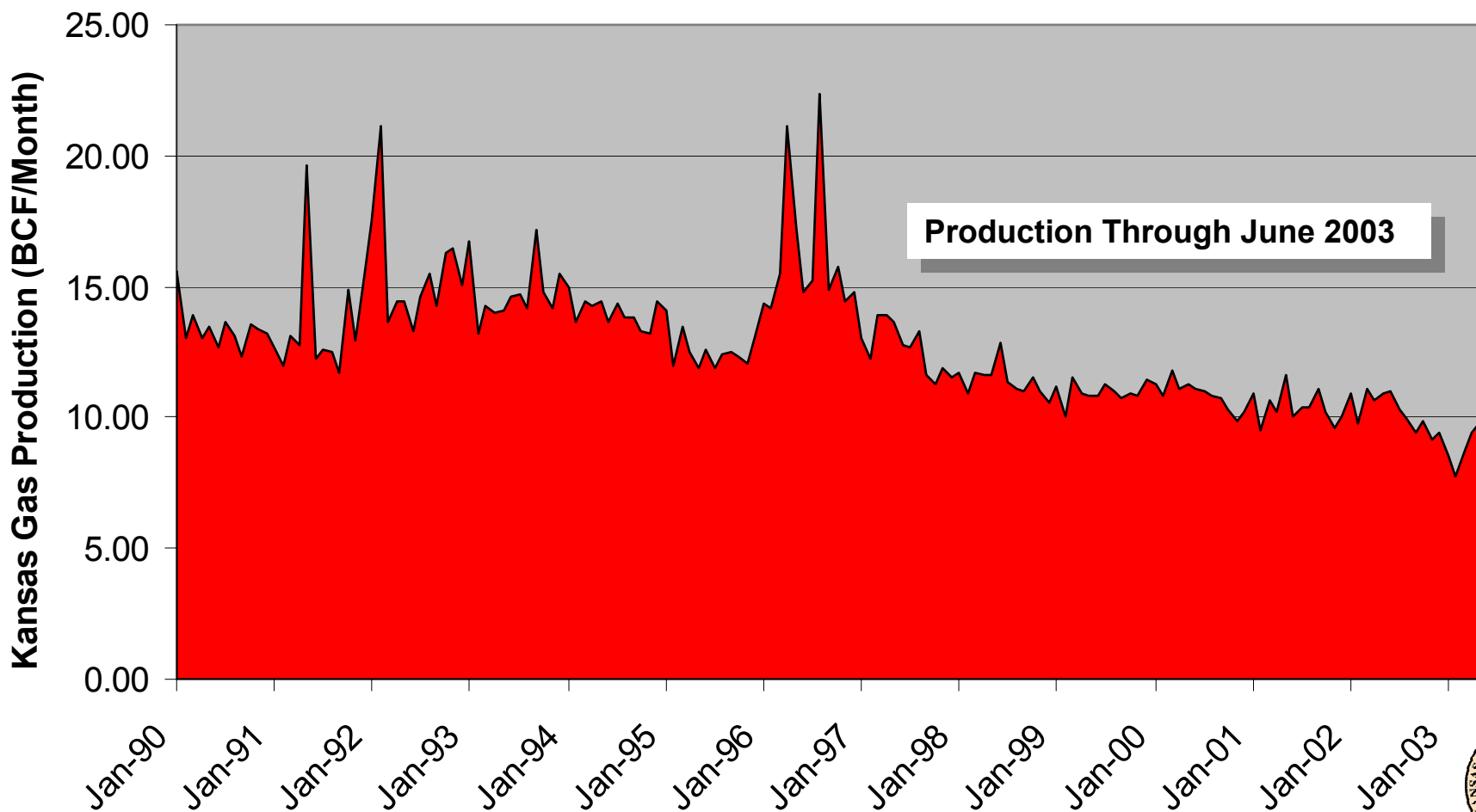
**NOTE: Colored Band is Normal Stock Range from previous 4 years**



# Hugoton & Panoma Gas Production

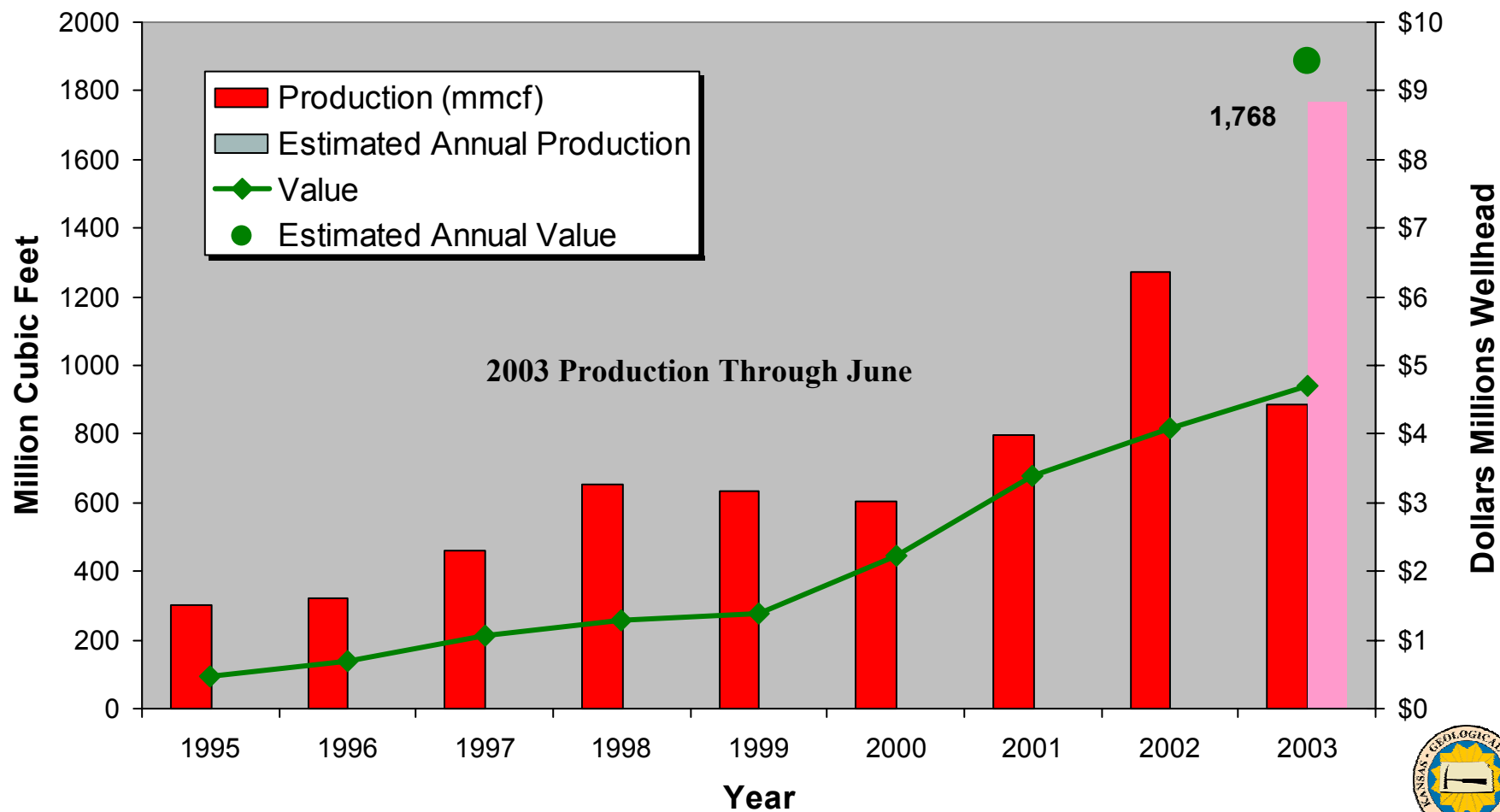


# Non - Hugoton Gas Production





# Wilson County Gas Production



Estimated Annual Value Assumes Constant Production and Price for Remainder of Year

October 21, 2003

T. R. Carr